TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

FILE COPY

ANALYTICAL REPORT

Job Number: 360-25577-1

Job Description: Olin Chemical Surface Water Quarterly

For:
Olin Corporation
3855 North Ocoee Street
Suite 200
Cleveland, TN 37312-4441

Attention: Mr. Steven Morrow

CHECKED FOR COMPLETENESS OF PARAMETERS ORDERED BY:

Approved for release.
Joe Chimi
Report Production Representative
11/25/2009 11:37 AM

Designee for
Becky C Mason
Project Manager II
becky.mason@testamericainc.com
11/25/2009

Results relate only to the items tested and the sample(s) as received by the laboratory. The test results in this report meet all NELAC requirements for accredited parameters, exceptions are noted in this report. Pursuant to NELAC, this report may not be reproduced except in full, and with written approval from the laboratory. TestAmerica Westfield Certifications and Approvals: MADEP MA014, RIDOH57, CTDPH 0494, VT DECWSD, NH DES 2539, NELAP FL E87912 TOX, NELAP NJ MA008 TOX, NELAP NY 10843, NY ELAP 10843, North Carolina 647, NELAP PA 68-04386. Field sampling is performed under SOPs WE-FLD-001 and WE-FLD-002.

TestAmerica Laboratories, Inc.
TestAmerica Westfield Westfield Executive Park, 53 Southampton Road, Westfield, MA 01085
Tel (413) 572-4000 Fax (413) 572-3707 www.testamericainc.com

ACCREDITED IN ACCORDANCE WITH nelac

Table of Contents

MADEP MCP Analytical Method Report Certification Form

Laboratory Name:	**TestAmerica Westfield**	Project #:	**360-25577-1**
Project Location:		MADEP RTN[1]:	

This form provides certifications for the following data set:[list Laboratory Sample ID Number(s)]
360-25577-(1-8)

Sample Matrices:	Groundwater	Soil/Sediment		Drinking Water	**Other:**	
MCP SW-846 Methods Used	8260B( )	8151A ( )	8330 ( )	6010B (**x**)	7470A/1A ( )	Other ( )
	8270C( )	8081A ( )	VPH ( )	6020 ( )	9014M[2]/9012 ( )	
As specified in MADEP Compendium of Analytical Methods. (check all that apply)	8082 ( )	8021B ( )	EPH ( )	7000 S[3]( )	7196A ( )	

1 List Release Tracking Number (RTN), if known
2 M - SW-846 Method 9014 or MADEP Physiologically Available Cyanide (PAC) Method
3 S - SW-846 Methods 7000 Series List individual method and analyte.

An affirmative response to questions A, B, C and D is required for "Presumptive Certainty" status

A	Were all samples received by the laboratory in a condition consistent with that described on the Chain-of-Custody documentation for the data set?	Yes √		No[1]
B	Were all QA/QC procedures required for the specified analytical method(s) included in this report followed, including the requirement to note and discuss in a narrative QC data that did not meet appropriate performance standards or guidelines?	Yes √		No[1]
C	Does the analytical data included in this report meet all the requirements for "Presumptive Certainty", as described in Section 2.0 (a), (b), (c) and (d) of the MADEP document CAM VII A, " Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	Yes √	N/A	No[1]
D	**VPH and EPH methods only:** Was the VPH or EPH Method conducted without significant modifications (see Section 11.3 of respective Methods)?	Yes	N/A √	No[1]

A response to questions E and F below is required for "Presumptive Certainty" status

E	Were all QC performance standards and recommendations for the specified methods achieved?	Yes √		No[1]
F	Were results for all analyte-list compounds/elements for the specified method(s) reported?	Yes	N/A	No[1] √

[1] All Negative responses must be addressed in an attached Environmental Laboratory case narrative.

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature:  **Position:** Laboratory Director

Printed Name: Steven C. Hartmann **Date:** 11/25/09 11:29

The certification form has been electronically signed and approved. CAM VII A, Rev 3.2 April-04

TestAmerica THE LEADER IN ENVIRONMENTAL TESTING

MADEP MA014
NY DOH 10843
RI DOH 57
CT DPH 0494
VT DECWSD

NELAP FL E87912 TOX
NELAP NJ MA008 TOX
NELAP NY 10843
NH DES 253901-A

TestAmerica Westfield
53 Southampton Rd,
Westfield, MA 01085
Tel:(413)572-4000
Fax:(413)572-3707

MADEP MCP Analytical Method Report Certification Form

Laboratory Name:	**TestAmerica Westfield**	Project #:	**360-25577-1**
Project Location:		MADEP RTN[1]:	

This form provides certifications for the following data set:[list Laboratory Sample ID Number(s)]
360-25577-(1-8)

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	8270C( )	8081A ( )	VPH ( )	6020 ( )	9014M[2]/9012 ( )	
As specified in MADEP Compendium of Analytical Methods. (check all that apply)	8082 ( )	8021B ( )	EPH ( )	7000 S[3]( )	7196A ( )	

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D	**VPH and EPH methods only:** Was the VPH or EPH Method conducted without significant modifications (see Section 11.3 of respective Methods)?	Yes	N/A √	No[1]

A response to questions E and F below is required for "Presumptive Certainty" status

E	Were all QC performance standards and recommendations for the specified methods achieved?	Yes		No[1] √
F	Were results for all analyte-list compounds/elements for the specified method(s) reported?	Yes	N/A √	No[1]

[1] All Negative responses must be addressed in an attached Environmental Laboratory case narrative.

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Printed Name: Steven C. Hartmann **Date:** 11/25/09 11:29

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CASE NARRATIVE

Client: Olin Corporation

Project: Olin Chemical Surface Water Quarterly

Report Number: 360-25577-1

This case narrative is in the form of an exception report, where only the anomalies related to this report, method specific performance and/or QA/QC issues are discussed. If there are no issues to report, this narrative will include a statement that documents that there are no relevant data issues.

It should be noted that samples with elevated Reporting Limits (RLs) as a result of a dilution may not be able to satisfy customer reporting limits in some cases. Such increases in the RLs are unavoidable but acceptable consequence of sample dilution that enables quantification of target analytes or interferences which exceed the calibration range of the instrument.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT
The samples were received on 11/12/2009; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was C.

Note: All samples which require thermal preservation are considered acceptable if the arrival temperature is within 2C of the required temperature or method specified range. For samples with a specified temperature of 4C, samples with a temperature ranging from just above freezing temperature of water to 6C shall be acceptable. Samples that are hand delivered immediately following collection may not meet these criteria, however they will be deemed acceptable according to NELAC standards, if there is evidence that the chilling process has begun, such as arrival on ice, etc.

MCP regulatory standard criteria were not specified for this report. Therefore, method reporting limits (RLs) were not assessed against any MCP standards as it may pertain to Question “E” on the Presumptive Certainty Certification Form (MADEP reference: WSC-CAM-AN-093008 - WSC-CAM Analytical Notes).

TOTAL METALS
Samples 360-25577-1 through 360-25577-8 were analyzed for total metals in accordance with EPA SW-846 Method 6010B. The samples were prepared and analyzed on 11/13/2009.

At the request of the client, an abbreviated/modified MCP analyte list was reported for this job.

No difficulties were encountered during the metals analyses.

All quality control parameters were within the acceptance limits.

DISSOLVED METALS
Samples 360-25577-1 through 360-25577-8 were analyzed for dissolved metals in accordance with EPA SW-846 Method 6010B. The samples were analyzed on 11/13/2009.

At the request of the client, an abbreviated/modified MCP analyte list was reported for this job.

No difficulties were encountered during the dissolved metals analyses.

All quality control parameters were within the acceptance limits.

ANIONS
Samples 360-25577-1 through 360-25577-8 were analyzed for anions in accordance with EPA Method 300.0. The samples were analyzed on 11/13/2009.

Samples 360-25577-1 through 360-25577-8(10X) required dilution prior to analysis due to high target concentration. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the anions analyses.

All quality control parameters were within the acceptance limits.

AMMONIA

Samples 360-25577-1 through 360-25577-8 were analyzed for ammonia in accordance with LACHAT 107-06-1B. The samples were prepared and analyzed on 11/24/2009.

Ammonia failed the recovery criteria low for the MS of sample 360-25577-6 in batch 360-52157. The presence of the '4' qualifier in the report indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount. The associated LCS recovered within control limits. Refer to the QC report for details.

Samples 360-25577-2(10X), 360-25577-3(10X), 360-25577-4 through 360-25577-7(5X) and 360-25577-8(10X) required dilution prior to analysis due to high concentration. The reporting limits have been adjusted accordingly.

No other difficulties were encountered during the ammonia analyses.

All other quality control parameters were within the acceptance limits.

SPECIFIC CONDUCTANCE

Samples 360-25577-1 through 360-25577-8 were analyzed for specific conductance in accordance with SM 2510B. The samples were analyzed on 11/13/2009.

No difficulties were encountered during the specific conductance analyses.

All quality control parameters were within the acceptance limits.

EXECUTIVE SUMMARY - Detections

Client: Olin Corporation Job Number: 360-25577-1

Lab Sample ID / Analyte	Client Sample ID	Result / Qualifier		Reporting Limit	Units	Method
360-25577-1	**OC-SW-ISCO3**					
Aluminum		55	J	100	ug/L	6010B
Sodium		60000		2000	ug/L	6010B
Sulfate		31		2.0	mg/L	300.0
Nitrate as N		0.97		0.050	mg/L	300.0
Chloride		160		10	mg/L	300.0
Ammonia		1.5		0.10	mg/L	L107-06-1B
Specific Conductance		650		1.0	umhos/cm	SM 2510B
Dissolved						
Sodium		79000		2000	ug/L	6010B
360-25577-2	**OC-SW-ISCO2**					
Aluminum		350		100	ug/L	6010B
Chromium		68		5.0	ug/L	6010B
Sodium		120000		2000	ug/L	6010B
Sulfate		510		20	mg/L	300.0
Nitrate as N		1.4		0.050	mg/L	300.0
Chloride		170		10	mg/L	300.0
Ammonia		83		1.0	mg/L	L107-06-1B
Specific Conductance		1600		1.0	umhos/cm	SM 2510B
Dissolved						
Aluminum		110		100	ug/L	6010B
Chromium		29		5.0	ug/L	6010B
Sodium		150000		2000	ug/L	6010B
360-25577-3	**OC-SW-PZ16RR**					
Aluminum		4800		100	ug/L	6010B
Chromium		1000		5.0	ug/L	6010B
Sodium		150000		2000	ug/L	6010B
Sulfate		380		20	mg/L	300.0
Nitrate as N		3.9		0.050	mg/L	300.0
Chloride		250		10	mg/L	300.0
Ammonia		57		1.0	mg/L	L107-06-1B
Specific Conductance		1600		1.0	umhos/cm	SM 2510B
Dissolved						
Aluminum		93	J	100	ug/L	6010B
Chromium		60		5.0	ug/L	6010B
Sodium		170000		2000	ug/L	6010B

EXECUTIVE SUMMARY - Detections

Client: Olin Corporation Job Number: 360-25577-1

Lab Sample ID / Analyte	Client Sample ID	Result / Qualifier		Reporting Limit	Units	Method
360-25577-4	**OC-SW-PZ17RR**					
Aluminum		3400		100	ug/L	6010B
Chromium		770		5.0	ug/L	6010B
Sodium		130000		2000	ug/L	6010B
Sulfate		250		20	mg/L	300.0
Nitrate as N		4.0		0.050	mg/L	300.0
Chloride		240		10	mg/L	300.0
Ammonia		37		0.50	mg/L	L107-06-1B
Specific Conductance		1300		1.0	umhos/cm	SM 2510B
Dissolved						
Aluminum		70	J	100	ug/L	6010B
Chromium		68		5.0	ug/L	6010B
Sodium		150000		2000	ug/L	6010B
360-25577-5	**OC-SW-SD17**					
Aluminum		2700		100	ug/L	6010B
Chromium		620		5.0	ug/L	6010B
Sodium		130000		2000	ug/L	6010B
Sulfate		200		20	mg/L	300.0
Nitrate as N		4.3		0.050	mg/L	300.0
Chloride		230		10	mg/L	300.0
Ammonia		28		0.50	mg/L	L107-06-1B
Specific Conductance		1300		1.0	umhos/cm	SM 2510B
Dissolved						
Aluminum		70	J	100	ug/L	6010B
Chromium		59		5.0	ug/L	6010B
Sodium		140000		2000	ug/L	6010B
360-25577-6	**OC-SW-18R**					
Aluminum		290		100	ug/L	6010B
Chromium		36		5.0	ug/L	6010B
Sodium		74000		2000	ug/L	6010B
Sulfate		140		20	mg/L	300.0
Chloride		110		10	mg/L	300.0
Ammonia		36		0.50	mg/L	L107-06-1B
Specific Conductance		800		1.0	umhos/cm	SM 2510B
Dissolved						
Aluminum		75	J	100	ug/L	6010B
Chromium		12		5.0	ug/L	6010B
Sodium		82000		2000	ug/L	6010B

EXECUTIVE SUMMARY - Detections

Client: Olin Corporation Job Number: 360-25577-1

Lab Sample ID / Analyte	Client Sample ID	Result / Qualifier		Reporting Limit	Units	Method
360-25577-7	**OC-SW-18R-DUP**					
Aluminum		280		100	ug/L	6010B
Chromium		34		5.0	ug/L	6010B
Sodium		71000		2000	ug/L	6010B
Sulfate		150		20	mg/L	300.0
Chloride		110		10	mg/L	300.0
Ammonia		33		0.50	mg/L	L107-06-1B
Specific Conductance		800		1.0	umhos/cm	SM 2510B
Dissolved						
Aluminum		84	J	100	ug/L	6010B
Chromium		13		5.0	ug/L	6010B
Sodium		83000		2000	ug/L	6010B
360-25577-8	**OC-SW-ISCO1**					
Aluminum		280		100	ug/L	6010B
Chromium		34		5.0	ug/L	6010B
Sodium		71000		2000	ug/L	6010B
Sulfate		150		20	mg/L	300.0
Chloride		120		10	mg/L	300.0
Ammonia		33		1.0	mg/L	L107-06-1B
Specific Conductance		790		1.0	umhos/cm	SM 2510B
Dissolved						
Aluminum		73	J	100	ug/L	6010B
Chromium		12		5.0	ug/L	6010B
Sodium		81000		2000	ug/L	6010B

METHOD SUMMARY

Client: Olin Corporation Job Number: 360-25577-1

Description	Lab Location	Method	Preparation Method
Matrix: Water			
Dissolved Metals	TAL WFD	SW846 6010B	
Total Metals	TAL WFD	SW846 6010B	
Sample Filtration, Field	TAL WFD		FIELD_FLTRD
Preparation, Total Metals	TAL WFD		SW846 3010A
Chloride & Sulfate	TAL WFD	40CFR136A 300.0	
Nitrate & Nitrite	TAL WFD	40CFR136A 300.0	
Nitrogen Ammonia	TAL WFD	LACHAT L107-06-1B	
Distillation, Ammonia	TAL WFD		Distill/Ammonia
Conductivity, Specific Conductance	TAL WFD	SM SM 2510B	

Lab References:

TAL WFD = TestAmerica Westfield

Method References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

LACHAT = LACHAT

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

METHOD / ANALYST SUMMARY

Client: Olin Corporation

Job Number: 360-25577-1

Method	Analyst	Analyst ID
SW846 6010B	Smith, Tim J	TJS
40CFR136A 300.0	Lalashius, Andrew L	ALL
LACHAT L107-06-1B	Lalashius, Andrew L	ALL
SM SM 2510B	Emerich, Rich W	RWE

SAMPLE SUMMARY

Client: Olin Corporation

Job Number: 360-25577-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
360-25577-1	OC-SW-ISCO3	Water	11/12/2009 0855	11/12/2009 1645
360-25577-2	OC-SW-ISCO2	Water	11/12/2009 0910	11/12/2009 1645
360-25577-3	OC-SW-PZ16RR	Water	11/12/2009 0930	11/12/2009 1645
360-25577-4	OC-SW-PZ17RR	Water	11/12/2009 0950	11/12/2009 1645
360-25577-5	OC-SW-SD17	Water	11/12/2009 1005	11/12/2009 1645
360-25577-6	OC-SW-18R	Water	11/12/2009 1020	11/12/2009 1645
360-25577-6MS	OC-SW-18R-MS	Water	11/12/2009 1020	11/12/2009 1645
360-25577-6MSD	OC-SW-18R-MSD	Water	11/12/2009 1020	11/12/2009 1645
360-25577-7	OC-SW-18R-DUP	Water	11/12/2009 1020	11/12/2009 1645
360-25577-8	OC-SW-ISCO1	Water	11/12/2009 1050	11/12/2009 1645

SAMPLE RESULTS

Mr. Steven Morrow
Olin Corporation
3855 North Ocoee Street
Suite 200
Cleveland, TN 37312-4441

Job Number: 360-25577-1

Client Sample ID: **OC-SW-ISCO3**
Lab Sample ID: **360-25577-1**

Date Sampled: 11/12/2009 0855
Date Received: 11/12/2009 1645
Client Matrix: Water

Analyte	Result/Qualifier		Unit	MDL	RL	Dilution
Method: Dissolved-6010B			Date Analyzed:		11/13/2009 1514	
Aluminum	ND		ug/L	39	100	1.0
Chromium	ND		ug/L	1.3	5.0	1.0
Sodium	79000 J		ug/L	250	2000	1.0
Method: 6010B			Date Analyzed:		11/13/2009 1426	
Prep Method: 3010A			Date Prepared:		11/13/2009 0746	
Aluminum	55	J	ug/L	39	100	1.0
Chromium	ND		ug/L	1.3	5.0	1.0
Sodium	60000 J		ug/L	250	2000	1.0

Mr. Steven Morrow
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Job Number: 360-25577-1

Client Sample ID: **OC-SW-ISCO3**
Lab Sample ID: **360-25577-1**

Date Sampled: 11/12/2009 0855
Date Received: 11/12/2009 1645
Client Matrix: Water

Analyte	Result/Qualifier	Unit	RL	RL	Dilution
Method: 300.0		Date Analyzed:	11/13/2009 1653		
Sulfate	31	mg/L	2.0	2.0	1.0
Nitrate as N	0.97	mg/L	0.050	0.050	1.0
Nitrite as N	ND	mg/L	0.010	0.010	1.0
Method: 300.0		Date Analyzed:	11/13/2009 1708		
Chloride	160	mg/L	10	10	10
Method: L107-06-1B		Date Analyzed:	11/24/2009 1537		
Prep Method: Distill/Ammonia		Date Prepared:	11/24/2009 1333		
Ammonia	1.5 J	mg/L	0.10	0.10	1.0
Method: SM 2510B		Date Analyzed:	11/13/2009 0929		
Specific Conductance	650	umhos/cm	1.0	1.0	1.0

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Job Number: 360-25577-1

Client Sample ID: **OC-SW-ISCO2**
Lab Sample ID: **360-25577-2**

Date Sampled: 11/12/2009 0910
Date Received: 11/12/2009 1645
Client Matrix: Water

Analyte	Result/Qualifier	Unit	MDL	RL	Dilution
Method: Dissolved-6010B		Date Analyzed:		11/13/2009 1522	
Aluminum	110	ug/L	39	100	1.0
Chromium	29	ug/L	1.3	5.0	1.0
Sodium	150000 J	ug/L	250	2000	1.0
Method: 6010B		Date Analyzed:		11/13/2009 1429	
Prep Method: 3010A		Date Prepared:		11/13/2009 0746	
Aluminum	350	ug/L	39	100	1.0
Chromium	68	ug/L	1.3	5.0	1.0
Sodium	120000 J	ug/L	250	2000	1.0

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Job Number: 360-25577-1

Client Sample ID: **OC-SW-ISCO2**
Lab Sample ID: **360-25577-2**

Date Sampled: 11/12/2009 0910
Date Received: 11/12/2009 1645
Client Matrix: Water

Analyte	Result/Qualifier	Unit	RL	RL	Dilution
Method: 300.0		Date Analyzed:		11/13/2009 1725	
Nitrate as N	1.4	mg/L	0.050	0.050	1.0
Nitrite as N	ND	mg/L	0.010	0.010	1.0
Method: 300.0		Date Analyzed:		11/13/2009 1740	
Sulfate	510	mg/L	20	20	10
Chloride	170	mg/L	10	10	10
Method: L107-06-1B		Date Analyzed:		11/24/2009 1612	
Prep Method: Distill/Ammonia		Date Prepared:		11/24/2009 1333	
Ammonia	83 J	mg/L	1.0	1.0	10
Method: SM 2510B		Date Analyzed:		11/13/2009 0932	
Specific Conductance	1600	umhos/cm	1.0	1.0	1.0

Mr. Steven Morrow
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Job Number: 360-25577-1

Client Sample ID: OC-SW-PZ16RR
Lab Sample ID: 360-25577-3

Date Sampled: 11/12/2009 0930
Date Received: 11/12/2009 1645
Client Matrix: Water

Analyte	Result/Qualifier	Unit	MDL	RL	Dilution
Method: Dissolved-6010B		Date Analyzed:		11/13/2009 1526	
Aluminum	93 J	ug/L	39	100	1.0
Chromium	60	ug/L	1.3	5.0	1.0
Sodium	170000 J	ug/L	250	2000	1.0
Method: 6010B		Date Analyzed:		11/13/2009 1432	
Prep Method: 3010A		Date Prepared:		11/13/2009 0746	
Aluminum	4800	ug/L	39	100	1.0
Chromium	1000	ug/L	1.3	5.0	1.0
Sodium	150000 J	ug/L	250	2000	1.0

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Job Number: 360-25577-1

Client Sample ID: **OC-SW-PZ16RR**
Lab Sample ID: **360-25577-3**

Date Sampled: 11/12/2009 0930
Date Received: 11/12/2009 1645
Client Matrix: Water

Analyte	Result/Qualifier	Unit	RL	RL	Dilution
Method: 300.0		Date Analyzed:	11/13/2009 1756		
Nitrate as N	3.9	mg/L	0.050	0.050	1.0
Method: 300.0		Date Analyzed:	11/13/2009 1811		
Sulfate	380	mg/L	20	20	10
Chloride	250	mg/L	10	10	10
Nitrite as N	ND	mg/L	0.10	0.10	10
Method: L107-06-1B		Date Analyzed:	11/24/2009 1613		
Prep Method: Distill/Ammonia		Date Prepared:	11/24/2009 1333		
Ammonia	57 J	mg/L	1.0	1.0	10
Method: SM 2510B		Date Analyzed:	11/13/2009 0934		
Specific Conductance	1600	umhos/cm	1.0	1.0	1.0

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Job Number: 360-25577-1

Client Sample ID: **OC-SW-PZ17RR**
Lab Sample ID: **360-25577-4**

Date Sampled: 11/12/2009 0950
Date Received: 11/12/2009 1645
Client Matrix: Water

Analyte	Result/Qualifier		Unit	MDL	RL	Dilution
Method: Dissolved-6010B			Date Analyzed:		11/13/2009 1529	
Aluminum	70	J	ug/L	39	100	1.0
Chromium	68		ug/L	1.3	5.0	1.0
Sodium	150000	J	ug/L	250	2000	1.0
Method: 6010B			Date Analyzed:		11/13/2009 1435	
Prep Method: 3010A			Date Prepared:		11/13/2009 0746	
Aluminum	3400		ug/L	39	100	1.0
Chromium	770		ug/L	1.3	5.0	1.0
Sodium	130000	J	ug/L	250	2000	1.0

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Job Number: 360-25577-1

Client Sample ID: OC-SW-PZ17RR
Lab Sample ID: 360-25577-4

Date Sampled: 11/12/2009 0950
Date Received: 11/12/2009 1645
Client Matrix: Water

Analyte	Result/Qualifier	Unit	RL	RL	Dilution
Method: 300.0		Date Analyzed:		11/13/2009 1856	
Nitrate as N	4.0	mg/L	0.050	0.050	1.0
Method: 300.0		Date Analyzed:		11/13/2009 1911	
Sulfate	250	mg/L	20	20	10
Chloride	240	mg/L	10	10	10
Nitrite as N	ND	mg/L	0.10	0.10	10
Method: L107-06-1B		Date Analyzed:		11/24/2009 1614	
Prep Method: Distill/Ammonia		Date Prepared:		11/24/2009 1333	
Ammonia	37 J	mg/L	0.50	0.50	5.0
Method: SM 2510B		Date Analyzed:		11/13/2009 0935	
Specific Conductance	1300	umhos/cm	1.0	1.0	1.0

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Job Number: 360-25577-1

Client Sample ID: **OC-SW-SD17**
Lab Sample ID: **360-25577-5**

Date Sampled: 11/12/2009 1005
Date Received: 11/12/2009 1645
Client Matrix: Water

Analyte	Result/Qualifier		Unit	MDL	RL	Dilution
Method: Dissolved-6010B			Date Analyzed:		11/13/2009 1532	
Aluminum	70	J	ug/L	39	100	1.0
Chromium	59		ug/L	1.3	5.0	1.0
Sodium	140000		ug/L	250	2000	1.0
Method: 6010B			Date Analyzed:		11/13/2009 1438	
Prep Method: 3010A			Date Prepared:		11/13/2009 0746	
Aluminum	2700		ug/L	39	100	1.0
Chromium	620		ug/L	1.3	5.0	1.0
Sodium	130000		ug/L	250	2000	1.0

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Job Number: 360-25577-1

Client Sample ID: **OC-SW-SD17**
Lab Sample ID: **360-25577-5**

Date Sampled: 11/12/2009 1005
Date Received: 11/12/2009 1645
Client Matrix: Water

Analyte	Result/Qualifier	Unit	RL	RL	Dilution
Method: 300.0		Date Analyzed:		11/13/2009 1926	
Nitrate as N	4.3	mg/L	0.050	0.050	1.0
Method: 300.0		Date Analyzed:		11/13/2009 1941	
Sulfate	200	mg/L	20	20	10
Chloride	230	mg/L	10	10	10
Nitrite as N	ND	mg/L	0.10	0.10	10
Method: L107-06-1B		Date Analyzed:		11/24/2009 1615	
Prep Method: Distill/Ammonia		Date Prepared:		11/24/2009 1333	
Ammonia	28 J	mg/L	0.50	0.50	5.0
Method: SM 2510B		Date Analyzed:		11/13/2009 0936	
Specific Conductance	1300	umhos/cm	1.0	1.0	1.0

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Job Number: 360-25577-1

Client Sample ID: **OC-SW-18R**
Lab Sample ID: **360-25577-6**

Date Sampled: 11/12/2009 1020
Date Received: 11/12/2009 1645
Client Matrix: Water

Analyte	Result/Qualifier		Unit	MDL	RL	Dilution
Method: Dissolved-6010B			Date Analyzed:		11/13/2009 1502	
Aluminum	75	J	ug/L	39	100	1.0
Chromium	12		ug/L	1.3	5.0	1.0
Sodium	82000	J	ug/L	250	2000	1.0
Method: 6010B			Date Analyzed:		11/13/2009 1446	
Prep Method: 3010A			Date Prepared:		11/13/2009 0746	
Aluminum	290		ug/L	39	100	1.0
Chromium	36		ug/L	1.3	5.0	1.0
Sodium	74000	J	ug/L	250	2000	1.0

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Job Number: 360-25577-1

Client Sample ID: **OC-SW-18R**
Lab Sample ID: **360-25577-6**

Date Sampled: 11/12/2009 1020
Date Received: 11/12/2009 1645
Client Matrix: Water

Analyte	Result/Qualifier	Unit	RL	RL	Dilution
Method: 300.0		Date Analyzed:		11/13/2009 1553	
Nitrate as N	ND	mg/L	0.050	0.050	1.0
Nitrite as N	ND	mg/L	0.010	0.010	1.0
Method: 300.0		Date Analyzed:		11/13/2009 1608	
Sulfate	140	mg/L	20	20	10
Chloride	110	mg/L	10	10	10
Method: L107-06-1B		Date Analyzed:		11/24/2009 1616	
Prep Method: Distill/Ammonia		Date Prepared:		11/24/2009 1333	
Ammonia	36 J	mg/L	0.50	0.50	5.0
Method: SM 2510B		Date Analyzed:		11/13/2009 0938	
Specific Conductance	800	umhos/cm	1.0	1.0	1.0

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Job Number: 360-25577-1

Client Sample ID: **OC-SW-18R-DUP**
Lab Sample ID: **360-25577-7**

Date Sampled: 11/12/2009 1020
Date Received: 11/12/2009 1645
Client Matrix: Water

Analyte	Result/Qualifier		Unit	MDL	RL	Dilution
Method: Dissolved-6010B			Date Analyzed:		11/13/2009 1542	
Aluminum	84	J	ug/L	39	100	1.0
Chromium	13		ug/L	1.3	5.0	1.0
Sodium	83000	J	ug/L	250	2000	1.0
Method: 6010B			Date Analyzed:		11/13/2009 1455	
Prep Method: 3010A			Date Prepared:		11/13/2009 0746	
Aluminum	280		ug/L	39	100	1.0
Chromium	34		ug/L	1.3	5.0	1.0
Sodium	71000	J	ug/L	250	2000	1.0

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Job Number: 360-25577-1

Client Sample ID: **OC-SW-18R-DUP**
Lab Sample ID: **360-25577-7**

Date Sampled: 11/12/2009 1020
Date Received: 11/12/2009 1645
Client Matrix: Water

Analyte	Result/Qualifier	Unit	RL	RL	Dilution
Method: 300.0		Date Analyzed:		11/13/2009 1956	
Nitrate as N	ND	mg/L	0.050	0.050	1.0
Nitrite as N	ND	mg/L	0.010	0.010	1.0
Method: 300.0		Date Analyzed:		11/13/2009 2011	
Sulfate	150	mg/L	20	20	10
Chloride	110	mg/L	10	10	10
Method: L107-06-1B		Date Analyzed:		11/24/2009 1621	
Prep Method: Distill/Ammonia		Date Prepared:		11/24/2009 1333	
Ammonia	33 J	mg/L	0.50	0.50	5.0
Method: SM 2510B		Date Analyzed:		11/13/2009 0939	
Specific Conductance	800	umhos/cm	1.0	1.0	1.0

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Job Number: 360-25577-1

Client Sample ID: **OC-SW-ISCO1**
Lab Sample ID: **360-25577-8**

Date Sampled: 11/12/2009 1050
Date Received: 11/12/2009 1645
Client Matrix: Water

Analyte	Result/Qualifier		Unit	MDL	RL	Dilution
Method: Dissolved-6010B			Date Analyzed:		11/13/2009 1545	
Aluminum	73	J	ug/L	39	100	1.0
Chromium	12		ug/L	1.3	5.0	1.0
Sodium	81000	J	ug/L	250	2000	1.0
Method: 6010B			Date Analyzed:		11/13/2009 1459	
Prep Method: 3010A			Date Prepared:		11/13/2009 0746	
Aluminum	280		ug/L	39	100	1.0
Chromium	34		ug/L	1.3	5.0	1.0
Sodium	71000	J	ug/L	250	2000	1.0

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Job Number: 360-25577-1

Client Sample ID: **OC-SW-ISCO1**
Lab Sample ID: **360-25577-8**

Date Sampled: 11/12/2009 1050
Date Received: 11/12/2009 1645
Client Matrix: Water

Analyte	Result/Qualifier	Unit	RL	RL	Dilution
Method: 300.0		Date Analyzed:		11/13/2009 2026	
Nitrate as N	ND	mg/L	0.050	0.050	1.0
Nitrite as N	ND	mg/L	0.010	0.010	1.0
Method: 300.0		Date Analyzed:		11/13/2009 2041	
Sulfate	150	mg/L	20	20	10
Chloride	120	mg/L	10	10	10
Method: L107-06-1B		Date Analyzed:		11/24/2009 1622	
Prep Method: Distill/Ammonia		Date Prepared:		11/24/2009 1333	
Ammonia	33 J	mg/L	1.0	1.0	10
Method: SM 2510B		Date Analyzed:		11/13/2009 0941	
Specific Conductance	790	umhos/cm	1.0	1.0	1.0

DATA REPORTING QUALIFIERS

Client: Olin Corporation Job Number: 360-25577-1

Lab Section	Qualifier	Description
Metals		
	4	MS, MSD: The analyte present in the original sample is 4 times greater than the matrix spike concentration; therefore, control limits are not applicable.
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
General Chemistry		
	F	MS or MSD exceeds the control limits

QUALITY CONTROL RESULTS

Client: Olin Corporation Job Number: 360-25577-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Prep Batch: 360-51587					
LCS 360-51587/2-A	Lab Control Sample	T	Water	3010A	
LCSD 360-51587/3-A	Lab Control Sample Duplicate	T	Water	3010A	
MB 360-51587/1-A	Method Blank	T	Water	3010A	
360-25577-1	OC-SW-ISCO3	T	Water	3010A	
360-25577-2	OC-SW-ISCO2	T	Water	3010A	
360-25577-3	OC-SW-PZ16RR	T	Water	3010A	
360-25577-4	OC-SW-PZ17RR	T	Water	3010A	
360-25577-5	OC-SW-SD17	T	Water	3010A	
360-25577-6	OC-SW-18R	T	Water	3010A	
360-25577-6MS	Matrix Spike	T	Water	3010A	
360-25577-6MSD	Matrix Spike Duplicate	T	Water	3010A	
360-25577-7	OC-SW-18R-DUP	T	Water	3010A	
360-25577-8	OC-SW-ISCO1	T	Water	3010A	
Analysis Batch:360-51650					
LCS 360-51587/2-A	Lab Control Sample	T	Water	6010B	360-51587
LCSD 360-51587/3-A	Lab Control Sample Duplicate	T	Water	6010B	360-51587
MB 360-51587/1-A	Method Blank	T	Water	6010B	360-51587
360-25577-1	OC-SW-ISCO3	T	Water	6010B	360-51587
360-25577-2	OC-SW-ISCO2	T	Water	6010B	360-51587
360-25577-3	OC-SW-PZ16RR	T	Water	6010B	360-51587
360-25577-4	OC-SW-PZ17RR	T	Water	6010B	360-51587
360-25577-5	OC-SW-SD17	T	Water	6010B	360-51587
360-25577-6	OC-SW-18R	T	Water	6010B	360-51587
360-25577-6MS	Matrix Spike	T	Water	6010B	360-51587
360-25577-6MSD	Matrix Spike Duplicate	T	Water	6010B	360-51587
360-25577-7	OC-SW-18R-DUP	T	Water	6010B	360-51587
360-25577-8	OC-SW-ISCO1	T	Water	6010B	360-51587
Analysis Batch:360-51674					
LCS 360-51674/20	Lab Control Sample	T	Water	6010B	
LCSD 360-51674/27	Lab Control Sample Duplicate	T	Water	6010B	
MB 360-51674/21	Method Blank	T	Water	6010B	
360-25577-1	OC-SW-ISCO3	D	Water	6010B	
360-25577-2	OC-SW-ISCO2	D	Water	6010B	
360-25577-3	OC-SW-PZ16RR	D	Water	6010B	
360-25577-4	OC-SW-PZ17RR	D	Water	6010B	
360-25577-5	OC-SW-SD17	D	Water	6010B	
360-25577-6	OC-SW-18R	D	Water	6010B	
360-25577-6MS	Matrix Spike	D	Water	6010B	
360-25577-6MSD	Matrix Spike Duplicate	D	Water	6010B	
360-25577-7	OC-SW-18R-DUP	D	Water	6010B	
360-25577-8	OC-SW-ISCO1	D	Water	6010B	

Client: Olin Corporation

Job Number: 360-25577-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch

Report Basis

D = Dissolved

T = Total

Client: Olin Corporation

Job Number: 360-25577-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
General Chemistry					
Analysis Batch:360-51614					
LCS 360-51614/10	Lab Control Sample	T	Water	SM 2510B	
MB 360-51614/3	Method Blank	T	Water	SM 2510B	
360-25577-1	OC-SW-ISCO3	T	Water	SM 2510B	
360-25577-1DU	Duplicate	T	Water	SM 2510B	
360-25577-2	OC-SW-ISCO2	T	Water	SM 2510B	
360-25577-3	OC-SW-PZ16RR	T	Water	SM 2510B	
360-25577-4	OC-SW-PZ17RR	T	Water	SM 2510B	
360-25577-5	OC-SW-SD17	T	Water	SM 2510B	
360-25577-6	OC-SW-18R	T	Water	SM 2510B	
360-25577-7	OC-SW-18R-DUP	T	Water	SM 2510B	
360-25577-8	OC-SW-ISCO1	T	Water	SM 2510B	
Analysis Batch:360-51682					
LCS 360-51682/4	Lab Control Sample	T	Water	300.0	
MB 360-51682/3	Method Blank	T	Water	300.0	
360-25577-1	OC-SW-ISCO3	T	Water	300.0	
360-25577-2	OC-SW-ISCO2	T	Water	300.0	
360-25577-3	OC-SW-PZ16RR	T	Water	300.0	
360-25577-4	OC-SW-PZ17RR	T	Water	300.0	
360-25577-5	OC-SW-SD17	T	Water	300.0	
360-25577-6	OC-SW-18R	T	Water	300.0	
360-25577-6MS	Matrix Spike	T	Water	300.0	
360-25577-6MSD	Matrix Spike Duplicate	T	Water	300.0	
360-25577-7	OC-SW-18R-DUP	T	Water	300.0	
360-25577-8	OC-SW-ISCO1	T	Water	300.0	
Analysis Batch:360-51684					
LCS 360-51684/4	Lab Control Sample	T	Water	300.0	
MB 360-51684/3	Method Blank	T	Water	300.0	
360-25577-1	OC-SW-ISCO3	T	Water	300.0	
360-25577-2	OC-SW-ISCO2	T	Water	300.0	
360-25577-3	OC-SW-PZ16RR	T	Water	300.0	
360-25577-4	OC-SW-PZ17RR	T	Water	300.0	
360-25577-5	OC-SW-SD17	T	Water	300.0	
360-25577-6	OC-SW-18R	T	Water	300.0	
360-25577-6MS	Matrix Spike	T	Water	300.0	
360-25577-6MSD	Matrix Spike Duplicate	T	Water	300.0	
360-25577-7	OC-SW-18R-DUP	T	Water	300.0	
360-25577-8	OC-SW-ISCO1	T	Water	300.0	

Client: Olin Corporation

Job Number: 360-25577-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
General Chemistry					
Prep Batch: 360-52128					
LCS 360-52128/2-A	Lab Control Sample	T	Water	Distill/Ammonia	
MB 360-52128/1-A	Method Blank	T	Water	Distill/Ammonia	
360-25577-1	OC-SW-ISCO3	T	Water	Distill/Ammonia	
360-25577-2	OC-SW-ISCO2	T	Water	Distill/Ammonia	
360-25577-3	OC-SW-PZ16RR	T	Water	Distill/Ammonia	
360-25577-4	OC-SW-PZ17RR	T	Water	Distill/Ammonia	
360-25577-5	OC-SW-SD17	T	Water	Distill/Ammonia	
360-25577-6	OC-SW-18R	T	Water	Distill/Ammonia	
360-25577-6MS	Matrix Spike	T	Water	Distill/Ammonia	
360-25577-6MSD	Matrix Spike Duplicate	T	Water	Distill/Ammonia	
360-25577-7	OC-SW-18R-DUP	T	Water	Distill/Ammonia	
360-25577-8	OC-SW-ISCO1	T	Water	Distill/Ammonia	
Analysis Batch:360-52157					
LCS 360-52128/2-A	Lab Control Sample	T	Water	L107-06-1B	360-52128
MB 360-52128/1-A	Method Blank	T	Water	L107-06-1B	360-52128
360-25577-1	OC-SW-ISCO3	T	Water	L107-06-1B	360-52128
360-25577-2	OC-SW-ISCO2	T	Water	L107-06-1B	360-52128
360-25577-3	OC-SW-PZ16RR	T	Water	L107-06-1B	360-52128
360-25577-4	OC-SW-PZ17RR	T	Water	L107-06-1B	360-52128
360-25577-5	OC-SW-SD17	T	Water	L107-06-1B	360-52128
360-25577-6	OC-SW-18R	T	Water	L107-06-1B	360-52128
360-25577-6MS	Matrix Spike	T	Water	L107-06-1B	360-52128
360-25577-6MSD	Matrix Spike Duplicate	T	Water	L107-06-1B	360-52128
360-25577-7	OC-SW-18R-DUP	T	Water	L107-06-1B	360-52128
360-25577-8	OC-SW-ISCO1	T	Water	L107-06-1B	360-52128

Report Basis

T = Total

Client: Olin Corporation

Job Number: 360-25577-1

Method Blank - Batch: 360-51587

Method: 6010B
Preparation: 3010A

Lab Sample ID: MB 360-51587/1-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 11/13/2009 1348
Date Prepared: 11/13/2009 0746

Analysis Batch: 360-51650
Prep Batch: 360-51587
Units: ug/L

Instrument ID: Varian 720 ES ICP
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result	Qual	MDL	RL
Aluminum	ND		39	100
Chromium	ND		1.3	5.0
Sodium	ND		250	2000

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 360-51587

Method: 6010B
Preparation: 3010A

LCS Lab Sample ID: LCS 360-51587/2-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 11/13/2009 1351
Date Prepared: 11/13/2009 0746

Analysis Batch: 360-51650
Prep Batch: 360-51587
Units: ug/L

Instrument ID: Varian 720 ES ICP
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

LCSD Lab Sample ID: LCSD 360-51587/3-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 11/13/2009 1354
Date Prepared: 11/13/2009 0746

Analysis Batch: 360-51650
Prep Batch: 360-51587
Units: ug/L

Instrument ID: Varian 720 ES ICP
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Aluminum	97	95	80 - 120	1	20		
Chromium	100	99	80 - 120	1	20		
Sodium	96	94	80 - 120	2	20		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Olin Corporation

Job Number: 360-25577-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 360-51587

Method: 6010B
Preparation: 3010A

MS Lab Sample ID:	360-25577-6	Analysis Batch:	360-51650	Instrument ID:	Varian 720 ES ICP
Client Matrix:	Water	Prep Batch:	360-51587	Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	11/13/2009 1449			Final Weight/Volume:	50 mL
Date Prepared:	11/13/2009 0746				

MSD Lab Sample ID:	360-25577-6	Analysis Batch:	360-51650	Instrument ID:	Varian 720 ES ICP
Client Matrix:	Water	Prep Batch:	360-51587	Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	11/13/2009 1452			Final Weight/Volume:	50 mL
Date Prepared:	11/13/2009 0746				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Aluminum	96	101	75 - 125	4	20		
Chromium	97	101	75 - 125	4	20		
Sodium	78	105	75 - 125	6	20		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Olin Corporation

Job Number: 360-25577-1

Method Blank - Batch: 360-51674

Method: 6010B
Preparation: N/A

Lab Sample ID: MB 360-51674/21
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 11/13/2009 1444
Date Prepared: N/A

Analysis Batch: 360-51674
Prep Batch: N/A
Units: ug/L

Instrument ID: Varian 720 ES ICP
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume: 1.0 mL

Analyte	Result	Qual	MDL	RL
Aluminum	ND		39	100
Chromium	ND		1.3	5.0
Sodium	ND		250	2000

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 360-51674

Method: 6010B
Preparation: N/A

LCS Lab Sample ID: LCS 360-51674/20
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 11/13/2009 1441
Date Prepared: N/A

Analysis Batch: 360-51674
Prep Batch: N/A
Units: ug/L

Instrument ID: Varian 720 ES ICP
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume: 10 mL

LCSD Lab Sample ID: LCSD 360-51674/27
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 11/13/2009 1517
Date Prepared: N/A

Analysis Batch: 360-51674
Prep Batch: N/A
Units: ug/L

Instrument ID: Varian 720 ES ICP
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume: 10 mL

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Aluminum	94	98	80 - 120	5	20		
Chromium	97	100	80 - 120	2	20		
Sodium	95	98	80 - 120	3	20		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Olin Corporation

Job Number: 360-25577-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 360-51674

Method: 6010B
Preparation: N/A

MS Lab Sample ID:	360-25577-6	Analysis Batch:	360-51674	Instrument ID:	Varian 720 ES ICP
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	
Date Analyzed:	11/13/2009 1505			Final Weight/Volume:	10 mL
Date Prepared:	N/A				

MSD Lab Sample ID:	360-25577-6	Analysis Batch:	360-51674	Instrument ID:	Varian 720 ES ICP
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	
Date Analyzed:	11/13/2009 1508			Final Weight/Volume:	10 mL
Date Prepared:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Aluminum	97	98	75 - 125	1	20		
Chromium	97	98	75 - 125	1	20		
Sodium	76	76	75 - 125	0	20	4	4

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Olin Corporation

Job Number: 360-25577-1

Method Blank - Batch: 360-51682

Method: 300.0
Preparation: N/A

Lab Sample ID: MB 360-51682/3
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 11/13/2009 1522
Date Prepared: N/A

Analysis Batch: 360-51682
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 1.0 mL
Final Weight/Volume: 1.0 mL

Analyte	Result	Qual	RL	RL
Nitrate as N	ND		0.050	0.050
Nitrite as N	ND		0.010	0.010

Lab Control Sample - Batch: 360-51682

Method: 300.0
Preparation: N/A

Lab Sample ID: LCS 360-51682/4
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 11/13/2009 1538
Date Prepared: N/A

Analysis Batch: 360-51682
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 1.0 mL
Final Weight/Volume: 1.0 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrate as N	4.00	4.18	105	85 - 115	
Nitrite as N	4.00	4.06	101	85 - 115	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Olin Corporation

Job Number: 360-25577-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 360-51682

Method: 300.0
Preparation: N/A

MS Lab Sample ID:	360-25577-6	Analysis Batch:	360-51682	Instrument ID:	No Equipment Assigned
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	10			Initial Weight/Volume:	1.0 mL
Date Analyzed:	11/13/2009 1623			Final Weight/Volume:	10 mL
Date Prepared:	N/A				

MSD Lab Sample ID:	360-25577-6	Analysis Batch:	360-51682	Instrument ID:	No Equipment Assigned
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	10			Initial Weight/Volume:	1.0 mL
Date Analyzed:	11/13/2009 1638			Final Weight/Volume:	10 mL
Date Prepared:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Nitrate as N	114	114	75 - 125	0	20		
Nitrite as N	108	108	75 - 125	0	20		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Olin Corporation

Job Number: 360-25577-1

Method Blank - Batch: 360-51684

Method: 300.0
Preparation: N/A

Lab Sample ID: MB 360-51684/3
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 11/13/2009 1522
Date Prepared: N/A

Analysis Batch: 360-51684
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 1.0 mL
Final Weight/Volume: 1.0 mL

Analyte	Result	Qual	RL	RL
Sulfate	ND		2.0	2.0
Chloride	ND		1.0	1.0

Lab Control Sample - Batch: 360-51684

Method: 300.0
Preparation: N/A

Lab Sample ID: LCS 360-51684/4
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 11/13/2009 1538
Date Prepared: N/A

Analysis Batch: 360-51684
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 1.0 mL
Final Weight/Volume: 1.0 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Sulfate	80.0	83.7	105	85 - 115	
Chloride	40.0	40.7	102	85 - 115	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Olin Corporation

Job Number: 360-25577-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 360-51684

Method: 300.0
Preparation: N/A

MS Lab Sample ID:	360-25577-6	Analysis Batch:	360-51684	Instrument ID:	No Equipment Assigned
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	10			Initial Weight/Volume:	1.0 mL
Date Analyzed:	11/13/2009 1623			Final Weight/Volume:	10 mL
Date Prepared:	N/A				

MSD Lab Sample ID:	360-25577-6	Analysis Batch:	360-51684	Instrument ID:	No Equipment Assigned
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	10			Initial Weight/Volume:	1.0 mL
Date Analyzed:	11/13/2009 1638			Final Weight/Volume:	10 mL
Date Prepared:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Sulfate	119	119	75 - 125	0	20		
Chloride	119	119	75 - 125	0	20		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Olin Corporation

Job Number: 360-25577-1

Method Blank - Batch: 360-52128

Method: L107-06-1B
Preparation: Distill/Ammonia

Lab Sample ID: MB 360-52128/1-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 11/24/2009 1533
Date Prepared: 11/24/2009 1333

Analysis Batch: 360-52157
Prep Batch: 360-52128
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 1.0 mL
Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL	RL
Ammonia	ND		0.10	0.10

Lab Control Sample - Batch: 360-52128

Method: L107-06-1B
Preparation: Distill/Ammonia

Lab Sample ID: LCS 360-52128/2-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 11/24/2009 1534
Date Prepared: 11/24/2009 1333

Analysis Batch: 360-52157
Prep Batch: 360-52128
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 1.0 mL
Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Ammonia	10.0	10.3	103	85 - 115	

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 360-52128

Method: L107-06-1B
Preparation: Distill/Ammonia

MS Lab Sample ID: 360-25577-6
Client Matrix: Water
Dilution: 10
Date Analyzed: 11/24/2009 1617
Date Prepared: 11/24/2009 1333

Analysis Batch: 360-52157
Prep Batch: 360-52128

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 1.0 mL
Final Weight/Volume: 50 mL

MSD Lab Sample ID: 360-25577-6
Client Matrix: Water
Dilution: 10
Date Analyzed: 11/24/2009 1620
Date Prepared: 11/24/2009 1333

Analysis Batch: 360-52157
Prep Batch: 360-52128

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 1.0 mL
Final Weight/Volume: 50 mL

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Ammonia	55	115	75 - 125	13	20	F	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Method Blank - Batch: 360-51614

Method: SM 2510B
Preparation: N/A

Lab Sample ID: MB 360-51614/3
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 11/13/2009 0854
Date Prepared: N/A

Analysis Batch: 360-51614
Prep Batch: N/A
Units: umhos/cm

Instrument ID: MAN-TECH Ion Plus
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume: 1.0 mL

Analyte	Result	Qual	RL	RL
Specific Conductance	ND		1.0	1.0

Lab Control Sample - Batch: 360-51614

Method: SM 2510B
Preparation: N/A

Lab Sample ID: LCS 360-51614/10
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 11/13/2009 0928
Date Prepared: N/A

Analysis Batch: 360-51614
Prep Batch: N/A
Units: umhos/cm

Instrument ID: MAN-TECH Ion Plus
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume: 1.0 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Specific Conductance	1410	1380	98	85 - 115	

Duplicate - Batch: 360-51614

Method: SM 2510B
Preparation: N/A

Lab Sample ID: 360-25577-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 11/13/2009 0931
Date Prepared: N/A

Analysis Batch: 360-51614
Prep Batch: N/A
Units: umhos/cm

Instrument ID: MAN-TECH Ion Plus Autotitrat
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume: 1.0 mL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Specific Conductance	650	650	0	20	

Calculations are performed before rounding to avoid round-off errors in calculated results.

State Accreditation Matrix

Method Name	Description	State where Primary Accreditation is Carried				
		New York (NELAC)	Mass	Conn	Florida (NELAC)	North Carolina
821-R-02-012	Toxicity, Acute (48-Hour)(list upon request)				NP	
SM 4500 Cl F	Chlorine, Residual		NP			
SM 9215B	Heterotrophic Plate Count (Pour Plate Method)		P			
SM 9215E	Heterotrophic Plate Count (SimPlate)		P			
SM 9221F	E.Coli (Multiple-Tube Fermentation; EC-MUG)		P			
SM 9222B	Coliforms, Total (Membrane Filter)		P			
SM 9222D	Coliforms, Fecal (Membrane Filter)		P/NP			
SM 9223	Coliforms, Total, and E.Coli (Colilert-P/A)		P			
200.8	Metals (ICP/MS) (list upon request)	NP/P	NP/P	NP/P		
200.7 Rev 4.4	Metals (ICP)(list upon request)	NP/P	NP/P	NP/P		
6010B	Metals (ICP)(list upon request)	NP/SW		NP/SW		
245.1	Mercury (CVAA)	NP/P	NP	NP/P		
7470A	Mercury (CVAA)	NP		NP		
7471A	Mercury (CVAA)	SW		SW		
SM 2340B	Total Hardness (as CaCO3) by calculation	NP/P	NP	NP/P		
3005A	Preparation, Total Recoverable or Dissolved Metals	NP/P		NP/P		
3010A	Preparation, Total Metals	NP/P		NP/P		
3020A	Preparation, Total Metals	NP/P/SW		NP/P/SW		
3050B	Preparation, Metals	SW		SW		
504.1	EDB, DBCP and 1,2,3-TCP (GC)		P	P		
608	Organochlorine Pest/PCBs (list upon request)	NP	NP	NP		
625	Semivolatile Org Comp (GC/MS)(list upon request)	NP		NP		
3546	Microwave Extraction	SW				
3510C	Liquid-Liquid Extraction (Separatory Funnel)	NP		NP		
3540C	Soxhlet Extraction					
3550B	Ultrasonic Extraction	SW		SW		
600/4-81-045	Polychlorinated Biphenyls (PCBs) (GC)		NP	NP		
8081A	Organochlorine Pesticides (GC)(list upon request)	NP/SW		NP/SW		
8082A	PCBs by Gas Chromatography(list upon request)	NP/SW		NP/SW		
8270C	Semivolatile Comp.(GC/MS)(list upon request)	NP/SW		NP/SW		
CT ETPH	Conn - Ext. Total petroleum Hydrocarbons (GC)			NP/SW		
MA-EPH	Mass - Extractable Petroleum Hydrocarbons (GC)			NP/SW		NP/SW
524.2	Volatile Org Comp (GC/MS)(list upon request)	P	P	P		
524.2	Trihalomethanes		P	P		
624	Volatile Org Comp (GC/MS)(list upon request)	NP	NP	NP		
5035	Closed System Purge and Trap	SW		SW		
5030B	Purge and Trap	NP		NP		
8260B	Volatile Org Comp. (GC/MS)(list upon request)	NP/SW		NP/SW		
MAVPH	Mass - Volatile Petroleum Hydrocarbons (GC)			NP/SW		NP/SW
180.1	Turbidity, Nephelometric		P	P		
300	Anions, Ion Chromatography	NP/P	NP/P	NP/P		
410.4	COD	NP	NP	NP		
1010	Ignitability, Pensky-Martens Closed-Cup Method	SW		SW		
10-107-06-2	Nitrogen, Total Kjeldahl	NP	NP	NP		
7196A	Chromium, Hexavalent	NP/SW		NP/SW		
9012A	Cyanide, Total and/or Amenable	NP/SW		NP/SW		
9030B	Sulfide, Distillation (Acid Soluble and Insoluble)	NP		NP		
9040B	pH	NP		NP		
9045C	pH	SW		SW		
L107041C	Nitrogen, Nitrate	NP	P	NP/P		
L107-06-1B	Nitrogen Ammonia	NP	NP	NP/P		
L204001A CN	Cyanide, Total		NP/P	NP/P		
L210-001A	Phenolics, Total Recoverable	NP	NP	NP		
SM 2320B	Alkalinity	NP/P	NP/P	NP/P		
SM 2510B	Conductivity, Specific Conductance	NP/P	NP/P	NP/P		
SM 2540C	Solids, Total Dissolved (TDS)	NP/P	NP/P	NP/P		
SM 2540D	Solids, Total Suspended (TSS)	NP	NP	NP		
SM 3500 CR D	Chromium, Hexavalent	NP		NP		
SM 4500 H+ B	pH	NP/P	NP/P	NP/P		
SM 4500 NO2 B	Nitrogen, Nitrite	NP	P	NP/P		
SM 4500 P E	Phosphorus, Orthophosphate	NP/P	NP	NP/P		
SM 4500 P E	Phosphorus, Total	NP	NP	NP		
SM 4500 S2 D	Sulfide, Total	NP		NP		
SM 5210B	BOD, 5-Day	NP	NP	NP		
SM 5310B	Organic Carbon, Total (TOC)	NP	NP	NP/P		

Not all organic compounds are accreditied under NELAC
For methods with multiple compounds all compounds may not meet NELAC criteria, listing should be obtained from the laboratory
The lab carries additional accreditations with several states. This is listing is subject to change based on the laboratories current certification standing.

Login Sample Receipt Check List

Client: Olin Corporation

Job Number: 360-25577-1

Login Number: 25577

List Source: TestAmerica Westfield

Creator: Rinard, Kimberley A

List Number: 1

Question	T / F/ NA	Comment
Radioactivity either was not measured or, if measured, is at or below background	N/A	
The cooler's custody seal, if present, is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	0.6 C / 1.2 C / 5.2 C
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified	True	

TestAmerica Laboratories, Inc.

Chain of Custody Form

•53 Southampton Road
Westfield, MA 01085
(P) 413-572-4000
(F) 413-572-3707

Client: Olin Chemical/MACTEC | Project #: 6107-09-0016-04 | Job# 360-25577 | Quote# | PO#

Address: 51 Eames Street | Project Manager: P. Thompson

Wilmington, MA 01887 | Work ID: **Surface Water**

Phone: Fax: | Contact: David Chapman

Requested Turn Around Time
10 Business Day (Std) XX | Rush TAT Requested:
15 Business Day | 24 hrs | 72 hrs
Other | 48 hrs | 5 Day

Regulatory Classification / Special Report Format
NPDES | Drinking Water | DEP Form(s)
RCRA | MCP GW1/S1 | MWRA Smart Rpt
Other | MCP QA/QC Rpt XX

Shaded areas for office use

Analysis Requested
Check analysis and specify method and analytes in comments section.
For example:
500-series for drinking water
600-series for waste water
8000-series for haz/solid waste
Use comments section to further define.

Comments (Special Instructions)

MCP case narrative

Sample Type Codes
WW-Wastewater DW-Drinking water SW-Surfacewater
LW-Labwater GW-Groundwater A-Air
S-Solid / Soil SL-Sludge O-Oil Z-Other

Sample ID	Sample Type	Sampler's Initials	Date / Time Collected	Grab	Comp.	# Containers	Plastic(P) or Glass(G)	Preservative: NaHSO4/MeOH	HNO3 to pH <2	H2SO4 to pH <2	HCl to pH <2	NaOH to pH >12	NAOH/ZNAC	None / 4° C	Ammonia-Nitrogen	Chloride, Sulfate	Specific Conductivity	Nitrate, Nitrite	Diss Al/Cr/Na by 6010B	Tot. Al/Cr/Na by 6010B	Other	Other	Other	Other	Other	Other	Other
OC-SW-ISCO3	SW	DLC CTM	11/12/09 0855	✓		4	P		2	1				1	X	X	X	X	X	X							
OC-SW-ISCO2	SW	DLC CTM	11/12/09 0910	✓		4	P		2	1				1	X	X	X	X	X	X							
OC-SW-P216RR	SW	DLC CTM	11/12/09 0930	✓		4	P		2	1				1	X	X	X	X	X	X							
OC-SW-P217RR	SW	DLC CTM	11/12/09 0950	✓		4	P		2	1				1	X	X	X	X	X	X							
OC-SW-SD17	SW	DLC CTM	11/12/09 1005	✓		4	P		2	1				1	X	X	X	X	X	X							
OC-SW-18R	SW	DLC CTM	11/12/09 1020	✓		4	P		2	1				1	X	X	X	X	X	X							
OC-SW-18R-DUP	SW	DLC CTM	↓	✓		4	P		2	1				1	X	X	X	X	X	X							
OC-SW-18R-MS	SW	DLC CTM	↓	✓		4	P		2	1				1	X	X	X	X	X	X							
OC-SW-18R-MSD	SW	DLC CTM	↓	✓		4	P		2	1				1	X	X	X	X	X	X							
OC-SW-ISCO1	SW	DLC CTM	11/12/09 1050	✓		4	P		2	1				1	X	X	X	X	X	X							

Dissolved metals are field filtered.

Analysis--
Ammonia Nitrogen--Lac 107-06-1B
Chloride/sulfate--EPA 300
Specific Conductivity--SM 2510B
Nitrate/Nitrite--EPA 300
48 hour hold time on NO2, NO3

48 Hour hold Time for surface water Samples

Sampled by (print): Chris M. / Dave C. | Signature:

Relinquished by: David Chapman | Date: 11/12/09 | Time: 1500 | Received by: | Date: 11/12/09 | Time: 1500

Relinquished by: | Date: 11/12/09 | Time: 1645 | Received by: | Date: 11/12/09 | Time: 1645

Method of shipment:

TestAmerica-Westfield

Cooler ? (Y) / N Samples Iced? (Y) / N

Temp @ receipt: 0.6/1.2°C/5.2°C

Preservation/pH checked

By: | Date: 11/12/09

White = Lab file Yellow = Report copy Pink = Customer copy
STL-8245 (1000)